DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-012365
Date Inspected: 02-Mar-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Clackamas,OR

CWI Name:	Jose Salazar			**CWI Present:**	☑ Yes	☐ No		
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A	
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A	
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: Hinge K

Summary of Items Observed:

On this date, Caltrans Quality Assurance Lead Inspector (QA) Joe Adame was present at Oregon Iron Works, Inc (OIW) to observe the fabrication of the Hinge K Pipe Beams assemblies and related items. The following observations were documented.

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-2:
The QA Inspector observed that OIW welder Marcus Belgrade (WID #B62) was in the process of performing submerged arc welding (SAW) on the a109 Cap plate to a106 HPS 485W stiffener base. The weld joint was designated as a partial joint penetration (AWS D1.5 TC-P4-S), weld joint #W2-19. Mr. Belgrade was performing SAW in the flat (1G) position on the cover passes using OIW welding procedure specification (WPS 4020). QC Inspector Jose Salazar stated that he had verified the in-process welding parameters and pre-heat temperature. The QC Inspector stated that he had observed the average welding parameters at 535 amps and 31 volts with a pre-heat temperature of 350 degrees Fahrenheit (177 C). The QA Inspector verified the welding parameters and observed a reading of 540 amps and 30 volts. The QA Inspector also verified the preheat temperature with a 177 C. temperature indicator. Preheat was sufficient. The QC Inspector also informed the QA Inspector that the travel speed was timed at approx 450 mm per minute. Items observed appeared to in general compliance with the AWS D1.5 and the applicable WPS (4020).

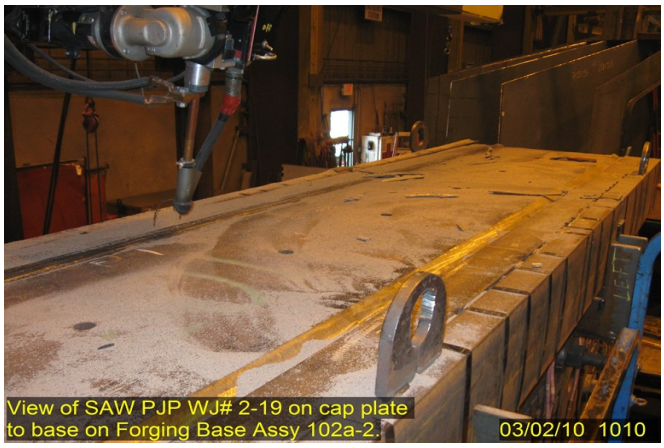
Hinge-K Pipe Beam Assembly 102A-3:
The QA Inspector observed OIW have placed Forging Base 102a-3 in the vertical milling lathe at OIW in Bay 3. The Forging base will have the edges of the HPS 485W longitudinal and radial stiffeners machined to a mill to

bear surface. This if for future fit up of the MTB cap plate interior. Critical Weld Repairs (CWR) were completed on this component on 3/01/10. The QA Inspector noted that OIW are still outstanding with correcting CWR documentation that will be formally submitted. METS had requested the contractor to make the corrections on 2/26/10. The QA Inspector also observed OIW Leadman Troy Smith preparing to fabricate a fixture device adjacent to the welding manipulator for mating of the first Fuse assembly to Forging base. Mr. Smith stated that the fixture should be complete within a week.

AG Machine Works (Boring, OR)
The QA Inspector arrived at AG Machine Works to observe the final machining on the Fuse 120A-7. The QA Inspector met with AG Machinist Stuart Doyle. Mr. Doyle explained that he was currently in process of completing the first final machining cut pass. Mr. Doyle explained that the machining cut pass is set to remove approximately 5 mm of stainless steel overlay material. Mr. Doyle also informed the QA Inspector that he has observed approx 10 rounded indications on the overlay surface. Mr. Doyle stated that he should start the 2nd cut pass (1 mm deep) before the end of this shift. Mr. Doyle also stated that the would be calling OIW Project Manger Bill Pender to inform him of the indications observed. The QA Inspector observed that the indications appear to be slag type rounded and linear inclusions. The discontinuities observed have been fairly consistent on previous Fuses and appear to have derived from the ESW overlay process.

Material, Equipment, and Labor Tracking (MELT)
QA Inspector Joe Adame performed a verification of material, personnel and equipment involved with the project. The QA Inspector accounted for: 3 OIW production personnel and 1 QC Inspectors. AG Machine: 1 Machinists and 1 Supervisor.

(See attached photos)


View of SAW PJP WJ# 2-19 on cap plate to base on Forging Base Assy 102a-2. 03/02/10 1010


Forging Base Assy 102a-2 in welding station for welding of cap plate to base. 03/02/10 1010

Summary of Conversations:

As noted in the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677 , who represents the Office of Structural Materials for your project.

Inspected By:	Adame,Joe	Quality Assurance Inspector
Reviewed By:	Mertz,Robert	QA Reviewer